

Claims:

1. A method for manufacturing a magnetic garnet single crystal, comprising the steps of:

5 adding 1~3% by weight of an alkali metal oxide or carbide to a mixture of garnet single crystal raw materials and $\text{Bi}_2\text{O}_3\text{-B}_2\text{O}_3\text{-PbO}$ as a flux, and melting the resulting mixture; and

10 growing a garnet single crystal from the melt by liquid phase epitaxy.

2. The method according to claim 1, wherein the alkali metal oxide or carbide is selected from oxides and carbides of lithium, sodium, potassium and rubidium.

15 3. The method according to claim 1 or 2, wherein the magnetic garnet single crystal has a composition represented by the formula $\text{Bi}_a\text{Pb}_b\text{Y}_c\text{Gd}_{3-(a+b+c)}\text{Pt}_d\text{Fe}_{5-d}\text{O}_{12}$ (in which $0.5 \leq a \leq 1.0$, $0 \leq b \leq 1.0$, $0.3 \leq c \leq 1.0$ and $0 \leq d \leq 1.0$).

20 4. A magnetic garnet single crystal having a composition represented by the formula $\text{Bi}_a\text{Pb}_b\text{Y}_c\text{Gd}_{3-(a+b+c)}\text{Pt}_d\text{Fe}_{5-d}\text{O}_{12}$ (in which $0.5 \leq a \leq 1.0$, $0 \leq b \leq 1.0$, $0.3 \leq c \leq 1.0$ and $0 \leq d \leq 1.0$), manufactured by the method according to claim 1 or 2.

5. An optical current transducer (CT) comprising the magnetic garnet single crystal according to claim 4.